DDI 1054-68

NPIC/D-94-68

8 APR 1968

MEMORANDUM FOR: Deputy Director for Intelligence

SUBJECT : Proposed R&D Project for PI Comparator

1. This memorandum requests approval to commit funds for the development of a PI comparator. The specific request is stated in paragraph eight.

2. The requirement for this project originated with the photo interpretation components in the Imagery Analysis Service and NPIC.

3. Measurement of items on photography are done by two separate groups in the Center; namely, the photogrammetrists and the photo interpreters. The measurements done by the photogrammetrist serve as the authoritative base for published reports and data base inclusion. The measurements of the PI serve as a complement to other tools of identification and interpretation. Interpreters have adequate direct viewing equipment available or under development, but until now have had no stereoscopic measurements capability consistent with the "sophistication" of the imagery. The Twin Stage Comparator is intended to provide the interpreter with such a measurement capability, and bridge the gap between the very high precision mensuration instruments available to the photogrammetrists and the presently used scales and reticles which the interpreter uses for measurements when higher accuracy is not needed.

4. With the advent of improved resolution of imagery there has been a quantum jump in requests and needs for measurement data. These needs are certain to surpass the capacity of highly-skilled photogrammetrists and their complex equipments. It will be of increasing importance to supplement this work by having imagery interpreters do measurement work with equipment such as the Twin Stage Comparator.

5. Technical details of the project are described in the attached proposal. It calls for the design and fabrication of a comparator to be used on-line with existing Center data processing equipment. It includes means to record film distances as small as two microns for transmission either directly to the computer or to a card punch machine. The work will be performed in a single phase, and the prototype comparator is to be delivered within 12 months of the contract date.

6. Development Objectives for the project were submitted to nine manufacturers and proposals were received from six. The [redacted] proposed the best overall design and offered the lowest price. 25X1

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

SUBJECT: Proposed R&D Project for PI Comparator

7. The project has been coordinated with DDS&T and with EXRAMD. There is no other equipment commercially available or under development which would satisfy the Center's needs in this field.

8. It is requested that approval be granted to negotiate with the [redacted] for a contract to build a prototype Twin-Stage, On-Line PI Comparator at a cost of [redacted] 25X1

25X1

ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

Attachments: (2)
R&D Catalog Form
[redacted] Proposal 25X1

APPROVED: [redacted] 25X1

Deputy Director for Intelligence

11 APR 1968
Date

Distribution:
Original - NPIC/TSSG/SS/LB (After approval)
1 - DDI
2 - NPIC/Dir
1 - NPIC/TSSG
- NPIC/TSSG/SS
1 - NPIC/TSSG/DED

NPIC/TSSG/DED/[redacted] (4 Apr 68) 25X1

R & D CATALOG FORM

DATE: 23 January 1968

1. PROJECT TITLE/CODE NAME
TWIN-STAGE ON-LINE PI COMPARATOR

2. SHORT PROJECT DESCRIPTION
Develop a twin-stage four-axis comparator for use by the operational P.I. in rapid response situations.

3. CONTRACTOR NAME

4. LOCATION OF CONTRACTOR

25X1

5. CLASS OF CONTRACTOR
Manufacturer

6. TYPE OF CONTRACT
Fixed-Price

7. FUNDS
FY 19 67 $ NONE

25X1

FY 19 68 $

FY 19 $ NONE

8. REQUISITION NO.

9. BUDGET PROJECT NO.
NP-V-22-02228

10. EFFECTIVE CONTRACT DATE *(Begin - end)*

11. SECURITY CLASS.
A.A. - Confidential
T. - Unclassified
W. - Unclassified

25X1

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION
DDI/NPIC/TSSG/

13. REQUIREMENT/AUTHORITY
A requirement exists for an instrument which will enable the P.I. and analyst to make rapid and accurate measurements on photography.

14. TYPE OF WORK TO BE DONE
Design and fabricate a two-stage, four-axis prototype comparator capable of 5 micron accuracy.

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Viewing System	Electronics
	Optics
	Reporting Systems

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
The end item will be a four-axis stereo comparator that the operational P.I. and analyst can use on-line to the central computer during the normal mission.

17. SUPPORTING OR RELATED CONTRACTS *(Agency & Other)*/COORDINATION
There is no known equivalent device under consideration by the community.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT *(Continue on additional page if required)*
This instrument will enable the operational P.I.s without experience in photogrammetric procedures, to obtain accurate dimensions from photo imagery in quick response situations.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

SECRET
(When Filled In)

SPEED LETTER	REPLY REQUESTED	DATE 5 January 1968
	X YES ☐ NO	LETTER NO. IAS/TA- 1/68

TO : Chief, Development Staff, NPIC	FROM:
ATTN: [redacted]	Imagery Analysis Service

25X1

SUBJECT: Request for Digitizing Twin-Stage PI Comparator and Fiber-Optics Viewer

1. Since NPIC is unable to provide sufficient mensuration support to IAS, we must have the capability to accomplish a portion of our mensural requirements using in-house equipment and manpower. Therefore, we consider it extremely important that you take action to digitize both stages on the prototype Twin-Stage PI Comparator so that height measurements can be derived by parallax techniques.

2. If funds permit, we also request that our Fiber-Optics Viewer be retrofitted with digitizers on all four axis; and that the necessary [redacted] components, including a card punch coupler, be added to give this instrument both an on-line and off-line mensuration capability. 25X1

3. Please give us your decision on these requests as soon as possible.

[redacted] 25X1

DIRECTOR, IMAGERY ANALYSIS SERVICE

SIGNATURE

REPLY	DATE

SIGNATURE

RETURN TO ORIGINATOR

FORM 5-61 1831

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